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ABSTRACT

Intended to help secondary school composition instructors develop a useful, pragmatic unit on technical writing, this monograph explores the theory, research, and pedagogy of technical writing. The first section discusses the purpose and forms of technical writing, as well as elements of technical style including diction, paragraphing, and emphasis. The second half provides writing exercises emphasizing the elements of technical style and the prewriting and writing stages. The book concludes with a discussion of revision in technical writing. (HTH)

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THEORY &
RESEARCH
INTO
PRACTICE

Teaching Technical Writing in the Secondary School

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THEORY & RESEARCH INTO PRACTICE

Teaching Technical Writing in the Secondary School

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Foreword

The Educational Resources Information Center (ERIC) is a national information system developed by the U.S. Office of Education and now sponsored by the National Institute of Education (NIE). ERIC provides ready access to descriptions of exemplary programs, research and development reports, and related information useful in developing effective educational programs.

Through its network of specialized centers or clearinghouses, each of which is responsible for a particular educational area, ERIC acquires, evaluates, abstracts, and indexes current information and lists that information in its reference publications.

The ERIC system has already made available—through the ERIC Document Reproduction Service—a considerable body of data, including all federally funded research reports since 1956. However, if the findings of educational research are to be used by teachers, much of the data must be translated into an essentially different context. Rather than resting at the point of making research reports easily accessible, NIE has directed the ERIC clearinghouses to commission authorities in various fields to write information analysis papers.

As with all federal educational information efforts, ERIC has as a primary goal bridging the gap between educational theory and classroom practice. One method of achieving that goal is the development by the ERIC Clearinghouse on Reading and Communication Skills (ERIC/RCS) of a series of booklets designed to meet concrete educational needs. Each booklet provides teachers with a review of the best educational theory and research on a limited topic, followed by descriptions of classroom activities that will assist teachers in putting that theory into practice.

The idea is not unique. Several educational journals and many commercial textbooks offer similar aids. The ERIC/RCS booklets are, however, noteworthy in their sharp focus on educational needs and their pairing of sound academic theory with tested classroom practice. And they have been developed in response to the increasing number of requests from teachers to provide this kind of service.

Topics for these booklets are recommended by the ERIC/RCS National Advisory Board. Suggestions for topics are welcomed by the Board and should be directed to the Clearinghouse.

Charles Suhor
Director, ERIC/RCS

1 Theory and Research

Technical writing can be defined as writing that conveys information, sometimes solely to impart knowledge and sometimes also to initiate action or change. It is factual writing that deals with fundamentals, principles, procedures, details, methods, and the like, and ideally it is also good writing—clear, accurate, and concise.

Technical writing is not new to the civilized world, nor did it emerge with the rise of modern technology. Rather, technical writing can be traced back to the Middle Ages, the Romans, the Greeks, and even the Babylonians—who produced a clay tablet dated circa 2000 B.C. which now rests in the New York Metropolitan Museum of History. One of the earliest surviving examples of technical writing, this clay tablet tells its readers how to make beer. The greatest writer of the Middle Ages, Geoffrey Chaucer, wrote *A Treatise on the Astrolabe* which, although not nearly so famous as *The Canterbury Tales*, is an instructional manual that tells its readers step-by-step how to calculate the movements of heavenly bodies by using the sextant-like instrument called the astrolabe.

Before Chaucer, a man named Frontinus, a water commissioner of Rome, wrote technical reports about the aqueducts (in A.D. 97); and another Roman named Vituvius, an architect in the time of Augustus Caesar, wrote a complex, ten-volume report about city planning (in 27 B.C.). The great philosopher Aristotle was also a technical writer, who wandered around his botanical gardens making notes about plants and other biological phenomena and who wrote treatises on physics and psychology.

Although technical writing is an ancient form of writing, it is still one of the most desirable skills in the marketplace. Andrews and Blickle (1982) have said that "scientists and engineers today produce far more written material than do novelists and poets, and may, in their way, be more influential." The so-called dean of American business management theory, Peter Drucker (1952), writes that the one basic, and perhaps most valuable, skill for employees is the "ability to organize and express ideas in writing and speaking" but "very few students bother to learn it."

Unfortunately, few students do bother to learn it, and—whether for lack of knowledge or out of fear—few secondary English teachers

	Expressive Writing	Literary Writing	Technical Writing	
Examples	Journals, diaries, personal writings, etc.	Novels, plays, poems, etc.	Instructional manuals, scientific articles, process descriptions, etc.	Proposals, sales letters, letters of recommendation etc.
Purpose	To reveal the writer's innermost feelings, doubts, fears, hopes	To create a world or part of a world	To impart facts	To persuade with facts
Focus	The writer	The literary work	The reader	
Writer's Role	Confessor	Creator	Teacher	Change agent
Reader's Role	Confidant	Observer	Learner	Receiver (possibly wary)

Figure 1. Three Forms of Writing and Their Function. [Adapted from Jakobson (1960) and Dilworth (1979).]

attempt to teach this form of writing that conducts the world's work. That is indeed unfortunate. As a recent survey shows, many proposals written by engineers are seriously flawed by foggy language, wordiness, gobbledygook, confusing sentences, failure to interrelate facts, illogical reasoning, little concept of audience, poor grammar, and inept punctuation (MacIntosh, 1979). Other studies have analyzed letters written by business personnel, showing similar weaknesses: wordiness, tired terms and gobbledygook, sentence vagueness or confusion, flawed punctuation that obscures meaning, grammatical faults, spelling errors, and lack of organization.

It is hoped that this guide to teaching technical writing will enable traditional teachers of language arts to approach the subject with confidence based on knowledge. In a unit on technical writing, students will quickly see the relevance of such writing and it will help them improve their writing skills through practice.

Purpose

If Gertrude Stein had been discussing writing rather than roses, she might have said "Writing is writing is writing," and she would have been correct in many respects. All effective writing consists of selecting appropriate words and combining those words into meaningful phrases and sentences, the sentences into well-developed paragraphs, and the paragraphs into a unified whole that has order and coherence. But all writing is not alike in other ways. Figure 1 shows how three rather distinct forms of writing—expressive, literary, and technical—can differ in purpose, focus, and the assumed roles of writer and reader.

Technical writing, as indicated in Figure 1, has a dual purpose—to inform and to persuade—and the focus is entirely on the reader, either on the reader's need to know or to change. This means that the writer must assume the authoritative role and must analyze the reader's characteristics in order to be effective.

Most authorities agree that the main purpose of technical writing is to inform the reader about some aspect of objective reality concerning which the reader knows little or nothing, or knows a great deal but wishes to know still more. "Types of Windmills," "How Windmills Produce Energy," and "How to Assemble and Install Your New Energy Efficient Windmill"—all are examples of informative technical writing.

The touchstones of technical writing, then, are objectivity, accuracy, and reader analysis. If this writing is to achieve its purpose—to impart information—the writer must carefully consider the reader's nature: How much does the reader already know about the topic? How much does the

reader need or want to know? How much background information must be included to help the reader understand the topic?

Not all technical writing is strictly informative, however. This is not to say that the writing becomes subjective, but rather that the writing attempts to sell with facts. "How Windmills Save Your Precious Energy Dollar," "Why XYZ Company Should Invest in Windmill Stock," and "Why You Should Buy Our Energy Efficient Windmill" are examples of persuasive technical writing. Again, reader analysis, specifically reader motivation, is a primary concern.

Forms of Technical Writing

Technical writing occurs in a myriad of forms. One need only glance at the index of any major technical writing textbook to be assured that there are abundant teaching possibilities for a unit on technical writing. Some typical forms, to name a few:

- abstracts
- brochures
- directives
- executive summaries
- information sheets
- instructions
- job descriptions
- journal articles
- letters
- literature reviews
- memorandums
- proposals
- prospectuses
- questionnaires
- reports
- specifications
- technical manuals

There are other genres, such as: letters (adjustment, application, collection, complaint, congratulatory, inquiry, order, refusal, request, sales, thank you, transmittal) and reports (annual, audit, evaluation, feasibility, field, fiscal, formal, informal, inspection, internal, investigation, laboratory, periodic, progress, test, trouble-shooting) which are in common use.

Figure 2 lists five sources that tell teachers what they need to know about most forms of technical writing. The sources were selected because they are easily adapted to junior high and high school levels and they have good explanations and models for teachers to use.

Style

Not only is there plenty to teach in a technical writing unit, but there is also much to teach in depth. Fred MacIntosh (1975) states that technical writers are constantly challenged by the complex tasks of (1) presenting

factual information clearly and concisely, (2) describing items, equipment systems, processes, and procedures; (3) explaining ideas, concepts, principles, and laws; (4) analyzing data, problems, situations, and relationships; (5) synthesizing, interpreting, and evaluating data; (6) making sound, logical cases for recommendations; and (7) adapting any of the above to different audiences and situations.

To accomplish these tasks, MacIntosh continues, technical writers need

> knowledge of and shrewd consideration of the situation and audience,
>
> sensitive awareness of how, when, where, and by whom the writing will be used,
>
> sensitivity to audience receptivity factors,
>
> knowledge of and skill with many rhetorical strategies,
>
> expertise in choosing among these strategies, and
>
> command of many organizational patterns.

In addition, they need skill in

> making organization evident to readers,
>
> making the larger interrelationships and continuity immediately recognizable as such,
>
> deciding upon and achieving the most effective tone for audience and purpose,
>
> controlling pace and density,
>
> choosing the appropriate level of vocabulary for the audience,
>
> presenting data graphically as well as verbally, and
>
> selecting the appropriate form and format, as well as the appropriate graphics, for the purpose.

Style, then, is a prime consideration in technical writing. Rhetorical techniques are not necessarily more important in technical writing than in other writing, but rhetorical techniques—if not altogether different—are emphasized differently. Elsewhere one of the authors has suggested several representative rhetorical competencies to teach in technical writing. Some of these are appropriate diction, economy of phrasing, paragraphing, parallelism, and emphasis (Fearing and Sparrow, in preparation).

Appropriate Diction

Every rhetorical handbook affords guidelines on word choice: Avoid nonstandard, colloquial, slang, jargon, and technical words in general

writing; select words with the proper connotation; prefer the specific to the abstract word; and avoid malapropisms, cliches, and trite language. Each guideline offers sound advice for writers in general and for technical writers in particular.

As Joseph Ulman and Jay Gould (1972) tell us, "every technical communication has one clear purpose: to convey information and ideas accurately and efficiently," and this purpose requires that technical writing be "as *clear* as possible, as *brief* as possible, and as *easy to understand* as possible." Yet, as Joseph Williams (1981) has found, "the single most serious problem that *mature* writers face" is "a wordy, too-complex prose style." The initial culprit is word choice. General Motors asserts that it has "never had a report submitted . . . in which the explanations and terms were too simple," and during their many years as consultants to business and industry, Gordon Mills and John Walter (1970) "have never heard of a complaint that the vocabulary in a report was too simple."

If "instant clarity at first, rapid reading" (MacIntosh, 1976) is one of the hallmarks of good technical writing, the first step toward that instant clarity is plain and simple language. In a technical writing class, students can be taught to select the simple over the complex word, to recognize and avoid tautologies, and to prefer the concrete over the abstract word.

Influenced as they are by the inflated language of business, industry, and government, students often ape their elders and erroneously select the impressive over the expressive word. A list of such word choices follows:

Impressive	Expressive
accrue	add, gain
activate	start
ascertain	learn, find out
assist	help
attempt	try
cognizant	aware
comprehend	understand
concentrate	focus
conceptualize	think
delineate	list
demonstrate	show
endeavor	try
enumerate	count, list

expertise	skill, knowledge
facilitate	help
finalize	complete, finish
furnish	give
inception	start, beginning
initial	first
inordinate	excessive
inquire	ask
minimize	decrease, reduce
optimum	best
prioritize	rank
proficiency	skill
sufficient	enough
ultimate	final
utilize	use

Shorter words not only take less time to write or typeset, they save the busy reader time and mental energy—energy better spent in considering or acting upon the message rather than in deciphering the code.

A second way to enhance clarity in writing is to point out the tautologies. Many of these expressions have been around so long and are so pervasive that they sound correct. A closer look, however, belies their logic:

advanced planning	old adage
awkward predicament	past experience
basic fundamentals	personal opinion
close scrutiny	plan ahead
direct confrontation	postpone until later
empty space	preplan
end result	protest against
exact opposites	reason why
false pretense	specific instance
first began	still persists
general consensus	sudden explosion
integral part	sum total

join together	true fact
major crisis	unexpected surprise
natural instinct	unintentional mistake

Pointing out tautologies actually helps student writers clarify their thoughts and become word watchers, if not wordsmiths.

Helping students convert abstract words into concrete words is not a simple process. Abstract words abound in business, technical, and government writing. Government institutions, for instance, develop "mission statements," their administrators engage in "functional task analysis," and their field coordinators "interface" with various "publics." Student writers who read widely in official documents, specialized textbooks, and professional journals will undoubtedly pick up on these abstract terms, incorporating them into their classroom writing assignments. It is important that teachers point out the need for specificity:

Abstract	Specific
a short summary	a 60-word summary
near accuracy	98 percent accuracy
a generous margin	a 1½" margin
good-quality paper	20-weight paper
a medium oven	350° oven
soon	by 5:00 p.m.
oil frequently	oil every 30 days

When a writer, for example, refers to a "facility," the reader has the right to know if the facility is a manufacturing plant, a classroom, a Girl Scout camp, or a shipyard. Even the more specific phrase "training facility" adds little unless the writer specifies whether the facility is a bootcamp, a writing center, a lecture hall, or a potty.

Specificity is an imperative in technical writing, raising the question of when to use technical terms. Ron S. Blicq (1981) explains that word choice is a matter of selecting the appropriate level for the intended audience. If the reader is an expert in the field, the writer can certainly use technical terms. If, however, the reader is a layperson with only a passing acquaintance with the field, the writer should use more general terms (1981). To illustrate, apply your knowledge of technical terms to the exercise "What Time of Day, What Time of Year?" on page 24, in the Practice section.

A sure way for the writer to sabotage the threefold objective of clarity, brevity, and understandability is to use gobbledygook—that morass of

pseudoliterate pomposity known variously as officialese, legalese, educationalese, Pentagonese, bafflegab, and so on. The following, a plea from education to business, says it all (*The Underground Grammarian*, 1980):

> Due to changing demographics and stagflation, the synergistic impact of the education system flowing into the industrial system is breaking apart. . . . The private sector has to intervene with a number of interventions beginning in junior high school. . . . If we are going to have synergism continue, the private sector has to get into the business of developing innovative structures and assist in a variety of joint venturing. [Wow!]

Economy

Again using the criterion of "instant clarity at the first, rapid reading" as a measure, economy not only in word choice but also in sentence structure is a must in teaching the technical writing unit. Sentence combining and generative grammar have a place in any writing unit, for they teach students how to subordinate and add detail; however, there are certain constructions to monitor for the sake of economy. Michael Adelstein (1971) is concerned with constructions that often add more words than meaning. Some of these offenders are the following:

1. Prepositional Phrases
   - Original: The representative of the college gave a catalog to each prospective student.
   - Edited: The college representative gave each prospective student a catalog. (reduced 25 percent)
   - Original: In the near future, career opportunities in the area of technical writing will be expanding.
   - Edited: Career opportunities in technical writing will soon be expanding. (reduced 40 percent)
   - Original: Enclosed is our check in the amount of $5.
   - Edited: Enclosed is our check for $5. (reduced 33 percent)
   - Or: Enclosed is our $5 check. (reduced 45 percent)
2. Who, Which, That Clauses
   - Original: Any student who has a lot of talent should apply for the scholarship.
   - Edited: Any talented student should apply for the scholarship. (reduced 39 percent)
   - Original: Anyone who has a plan that is feasible will be recognized.
   - Edited: Anyone with a feasible plan will be recognized. (reduced 28 percent)

Original: At the end of the day, you may put the letters that you have typed on Mrs. Thomas's desk.
Edited: At the end of the day, you may put the typed letters on Mrs. Thomas's desk. (reduced 16 percent)

3. Weak Verb + Noun Combinations
Original: Janet Holliday gave a presentation of the findings to the committee.
Edited: Janet Holliday presented the findings to the committee. (reduced 27 percent)
Original: Professor Allen makes frequent references to M*A*S*H.
Edited: Professor Allen refers frequently to M*A*S*H. (reduced 14 percent)
Original: This section is an explanation of how to achieve clear writing.
Edited: This section explains how to achieve clear writing. (reduced 27 percent)

4. "There Are," "It Is" False Starts
Original: There are many teachers on the faculty who want additional A-V equipment.
Edited: Many teachers want additional A-V equipment. (reduced 50 percent)
Original: There are two students waiting in the principal's office.
Edited: Two students are waiting in the principal's office. (reduced 11 percent)
Original: It is essential to proofread each report for spelling errors.
Edited: Proofread each report for spelling errors. (reduced 40 percent)

5. Passive Voice
Original: Every one of his footnotes was carefully checked by him.
Edited: He carefully checked each of his footnotes. (reduced 22 percent)
Original: A ten percent interest rate on their money is received by all depositors.
Edited: All depositors receive ten percent interest on their money. (reduced 31 percent)
Original: It was eventually discovered by alchemists that gold could not be made.
Edited: Alchemists eventually discovered that they could not make gold. (reduced 25 percent)

Obviously we are not advocating that students never use the above constructions, only that they become aware of such constructions, and

delete them when this does not obscure meaning or change the desired tone. For example, deletion of a relative clause can obscure meaning as in:

> Ambiguous: Mr. Dockpoint needed the letter [that was] sent out yesterday.

The passive is acceptable and even preferred when the actor is unknown or irrelevant.

> Emphatic: The unruly student was suspended.

The passive is also preferred when the writer wishes to achieve a neutral tone:

> Not: You failed to complete and return the form.
> But: The form should have been completed and returned.

Economy is a plus in technical writing, but it should never sacrifice clarity or courtesy.

Paragraphing

"Lack of paragraph development" is a frequent marginal notation that teachers write on student essays. Almost the opposite is true in technical documents where writers strive to present information in logically organized, bite-sized, easy-to-read paragraphs. Again, the need to conserve reader's time by increasing the documents' readability is the prime consideration.

Although the role of the paragraph is complex, theory and research have contributed to our understanding of paragraph organization. For example, recent research substantiates the theory that an organized paragraph is more easily understood than a disorganized paragraph and that putting the main idea first in a paragraph increases reader comprehension (Felkner, 1981).

The ideal length of a paragraph is still a fuzzy point, however, Blicq (1981) offers several astute pointers about paragraph length:

> Variety in paragraph length has a lively visual effect.
>
> A series of equal-length paragraphs creates the impression of dullness.
>
> Readers attach importance to a paragraph that is clearly longer or shorter than those surrounding it.
>
> Paragraph length needs to be adjusted to suit the complexity of your topic and the technical level of your readers. Generally, complex topics demand short paragraphs containing small portions of information.

If, as Andrews and Blickle (1982) state, complex content should be presented in short sentences and simple content in longer sentences, then a similar guideline should hold true for paragraphs. Sometimes, however, using a long paragraph for a simple subject detracts from the meaning, as this example shows:

How to Choose a Car Dealer

> Ideally, you want a car dealer who performs reliable service and who offers fair prices. There are several precautions you can take. Look at a dealer's service area. It should be two to three times the size of the showroom. If not, the dealer is not serious about repairs. Check around for diagnostic equipment, such as an engine oscilloscope, that can take expensive guesswork out of repairs. You want a shop where the dealer has spent a lot of money to equip properly. Make price comparisons among several dealers. The difference can save you money on repair and maintenance bills. Ask friends and relatives about the service their dealers give. Personal testimony is among the best of guarantees. If a dealer consistently gets a high rating, then buy whatever kind of car that dealer sells. Finally, don't do business with a dealer who misleads you during the selling process. Unethical sales representatives usually mean unethical repair personnel.

Although simple in content, the above paragraph is too long and cumbersome. It buries important information in continuous lines of prose unrelieved by white space. Blicq suggests that students of technical writing split out important information in long paragraphs by "subparagraphing." Using the subparagraphing technique, the revised paragraph looks like this:

> Ideally, you want a car dealer who performs reliable service and who offers fair prices. There are several precautions you can take:
>
> 1. Look at the dealer's service area. It should be two to three times the size of the showroom. If not, the dealer is not serious about repairs.
> 2. Check around for diagnostic equipment, such as an engine oscilloscope, that can take expensive guesswork out of repairs.
>
>   You want a shop where the dealer has spent a lot of money to equip properly.
> 3. Make price comparisons among several dealers. The difference can save you money on repair and maintenance bills.

4. Ask friends and relatives about the service their dealers give. Personal testimony is among the best of guarantees. If a dealer consistently gets a high rating, then buy whatever kind of car that dealer sells.

Finally, don't do business with a dealer who misleads you during the selling process. Unethical sales representatives usually mean unethical repair personnel.

Parallelism

One of the most aesthetically pleasing rhetorical devices is parallelism, that knack of pairing and joining words, phrases, clauses, and sentences in like grammatical structures. Parallelism is balance and symmetry; it is order and pattern. Many of history's best-known phrases are memorable because they were cast in parallel form:

> I see one-third of a nation ill-housed, ill-clad, ill-nourished. (Franklin Delano Roosevelt)
>
> Death and sorrow will be the companions of our journey; hardship our garment; constancy and valor our only shield. We must be united, we must be undaunted, we must be inflexible. (Sir Winston Churchill)
>
> Ask not what your country can do for you; ask what you can do for your country. (J. F. Kennedy)

Conventional textbooks readily point out the advantage of parallelism as an aid to clarity, consistency, and continuity. Students should continually develop their skills in composing parallel structures in the technical writing unit. They should balance "a word with a word, a phrase with a phrase, a clause with a clause, a sentence with a sentence" (Hodges and Whitten, 1982).

> She is intelligent, witty, and lively. (Not: full of life)
>
> Employees are expected to arrive on time, to work productively, and to be pleasant. (Not: smile a lot)
>
> Yesterday, I was a student; today, I am the teacher. (Not: Yesterday, I was enrolled in school)

Students should also learn the special uses of parallelism particular to technical writing: in lists and subparagraphs, in instructions and directions, in headings and captions, and in outlines and tables of contents.

Lists are a clear, concise method of conveying information:

When you go to the testing center, be sure to take the following:

an I.D. card

a blue examination booklet

a number 2 pencil

a pocket calculator

Like lists, subparagraphs should be presented in parallel form. The following two illustrate:

Three methods for stopping bleeding are the direct pressure method, the pressure point method, and the tourniquet method:

1. Direct pressure method: In this method, you apply pressure . . . .
2. Pressure point method: In this method, you apply pressure . . . .
3. Tourniquet method: In this method, you apply pressure . . . .

The government inspectors found four cases of safety violations:

In the first case . . .

In the second case . . .

In the third case . . .

In the fourth case . . .

When writing instructions and directions, writers can wreak havoc when they violate the rules of parallelism. Notice how the following example tends to confuse, or slow down, the reader at first, rapid reading:

If you are considering buying a used car, there are several precautions you can take to ensure the best buy:

1. Go in the daytime to inspect the car . . .
2. Check the tires for wear . . .
3. Rust spots may be apparent . . .
4. A repainted car may indicate that the car has been wrecked . . .
5. Open and close the doors, the trunk, and the hood . . .
6. Start the engine . . .
7. Check the dashboard controls and the electrical switches for . . .
8. To check for worn shocks . . .

Items 1, 2, 5, 6, and 7 are direct and predictable; they are written in the imperative mode. Items 3, 4, and 8 break with the expected form.

Headings and captions, as well as outlines and tables of contents, profit from parallel structure. In the example given earlier, about buying a used car, one can readily see where the eight precautions fit in the following system of headings:

Inspecting a Used Car

On the Lot

On the Road

With the Mechanic

Headings, of course, evolve from the table of contents, which evolves from the outline. If students never before saw the need for parallel structures in outlines written for essays, they will quickly see that need in outlines written for technical documents. Parallelism not only maintains the orderliness of entries; it also indicates the hierarchical relationship among levels of entries. For example, a pamphlet on "Writing Research Papers" might look something like this:

1. How to Use the Library
   - 1.1 Using the Card Catalogue
   - 1.2 Using Periodical Indexes
   - 1.3 Using Computer Databases
2. How to Record Information
   - 2.1 Making Bibliography Cards
   - 2.2 Making Note Cards
     - 2.2.1 Précis
     - 2.2.2 Summary
     - 2.2.3 Paraphrase
3. How to Write the First Draft
   - 3.1 Organizing the Information
   - 3.2 Writing the Outline
   - 3.3 Writing the Draft
4. How to Revise the First Draft
   - 4.1 Checking Organization
   - 4.2 Editing for Clarity and Style
   - 4.3 Editing for Grammar and Mechanics

The parallel structures are consistent within equal-level entries but are differentiated among varying levels ("How to" for first-level headings vs. the participle *-ing* for second-level headings). When these entries which

compose the table of contents are incorporated as headings within the document itself, the consistently differentiated parallel syntax reinforces the hierarchical relationship among the headings.

Emphasis

In helping students highlight key ideas, teachers can incorporate two approaches in the technical writing unit: (1) rhetorical techniques and (2) mechanical devices.

Rhetorical techniques for emphasizing key points are prominent position, economy of phrasing, use of vigorous words, and use of compact sentences. Busy readers of technical documents expect to find the main points in the most prominent position—the beginning. Therefore, key ideas should come first in a sentence, in a paragraph, and in a letter or report. Key ideas may also be reemphasized at the end of a sentence, paragraph, letter, or report.

Economy in the use of words is a second technique for emphasis. As we mentioned earlier, too many words and too much detail can obscure important material. Clear out the clutter, and main points stand out.

Short, concrete words, short sentences, and short paragraphs tend to highlight information. Parallelism and active voice also help to spotlight key points by presenting them in a structured, forceful manner.

In preparing this section on style, the authors had to decide where to place the topic of emphasis. We chose the last position—not only because it is emphatic, but also because *emphasis* nicely sums up the point we wanted to make: simple diction, economy, active voice, compact paragraphs, and parallelism—all contribute to emphasis. (And repetition does, too.)

Traditional composition textbooks rarely touch upon the use of mechanical devices for emphasis: typography, headings, and enumeration. Teachers can show students how to emphasize key points typographically with underscoring, *italics*, SMALL CAPITALS, LARGE CAPITALS, *ITALIC LARGE CAPITALS*, **boldface**, and LARGE and SMALL CAPITALS.

Headings have a threefold value: they highlight important material, they visually outline a document, and they indicate the sequence of the divisions within the subject-matter. When writers use typography and indentations to show degree, headings and subheadings help readers see the hierarchical relationships among the parts of a document, allowing them to zero in on needed information.

Enumeration is another device for highlighting important material. The reader's eye is drawn to items set off by white space and spotlighted by numbers (1. 2. 3.), bullets (•), blocks (■), or arrows (▶).

Subjects	*How to Write for the World of Work.* Pearsall and Cunningham, 1982	*Reporting Technical Information.* Houp and Pearsall, 1980	*Technical English.* Pickett and Laster, 1980	*Technical Writing.* Lannon, 1982	*Technical Writing: A Guide with Models.* Brinegar and Skates, 1983
Abstracts and Summaries	*	*	**	**	**
Letters	*	*	*	*	*
Literature Reviews	**				**
Memorandums	*	*	*	*	*
Proposals	**	**		*	**
Reports:					
Accident	*				
Analytical	**	**		*	*
Feasibility					*
Field Trip	*		*		*
Evaluation					*
Inspection				*	
Investigation			**		**
Oral	*	**	*	*	
Periodic	*		*		
Physical		**			
Progress	*	**	*	*	**
Research	**	**	**	**	*
Survey					*

continued

Subjects	*How to Write for the World of Work.* Pearsall and Cunningham, 1982	*Reporting Technical Information.* Houp and Pearsall, 1980	*Technical English.* Pickett and Laster, 1980	*Technical Writing.* Lannon, 1982	*Technical Writing: A Guide with Models.* Brinegar and Skates, 1983
Technical Modes:					
Comparison and Contrast	*	*	*	*	*
Cause and Effect	*	*	**	*	*
Definition	*	*	**	**	*
Division and Classification	*	*	*	**	*
Instructions	**	*	**	*	**
Mechanism Description	**	*	*	**	*
Process Description	**	**	**	**	**
Visuals	**	**	**	**	*
Handbook	*	*	*	*	*

*Has wide coverage of the basic form or topic indicated.
**Exceptionally good source in the area indicated.

Figure 2. Standard Sources for Technical Writing Instructional Materials

In summary, to highlight key points in technical writing, students should learn to use a combination of rhetorical techniques and mechanical devices:

1. Rhetorical Techniques
   - Prominent position
   - Economy
   - Vigorous words
   - Compact sentences
2. Mechanical Devices
   - Typography
   - Headings
   - Enumeration

Professional Resources

Having read Part 1 on Theory and Research and armed yourself with the classroom exercises in Part 2, you are well on your way toward developing a useful, pragmatic unit on technical writing. Remember, though, that this ERIC book is just a beginning. Expecting to learn everything about technical writing from one book is as naive as expecting to learn everything about technical writing from a two-week workshop.

The successful teacher continues to read and learn. We have, therefore, prepared the following list of professional development resources to meet your continuing professional needs. The list is divided into three categories: books, journals, and summer institutes. By using these resources, you can learn and borrow from the most knowledgeable technical writing teachers in the field.

Books

Anderson, Paul, ed. *Teaching Technical Writing: Teaching Audience Analysis*. Morehead State University, Morehead, Ky. 40351: Association of Teachers of Technical Writing, 1980.

Anderson, Paul V. and R. John Brockmann, eds. *New Essays in Technical and Scientific Communication: Theory, Research, and Practice*. 120 Marine Street, Box D, Farmingdale, N.Y. 11735: Baywood Publishing Company, 1983.

Cunningham, Donald H. and Herman A. Estrin, eds. *The Teaching of Technical Writing*. 1111 Kenyon Road, Urbana, Ill. 61801: National Council of Teachers of English, 1975.

Douglas, George H., ed. *The Teaching of Business Communication*. 608 South Wright Street, Urbana, Ill. 61801: American Business Communication Association, 1978.

Harris, John S., ed. *Teaching Technical Writing: Training Teachers of Technical Writing*. Morehead State University, Morehead, Ky. 40351: Association of Teachers of Technical Writing, in preparation.

Pearsall, Thomas E. *Teaching Technical Writing: Methods for College English Teachers*. 815 15th Street N.W., Suite 506, Washington, D.C. 20005: Society for Technical Communication, 1977.

Sawyer, Thomas M., ed. *Technical and Professional Communication: Teaching in the Two-Year College, Four-Year College, Professional School*. University of Michigan, Ann Arbor, Mich.: Professional Communication Press, Inc., 1977.

Sparrow, W. Keats and Nell Ann Pickett, eds. *Technical and Business Communication in Two-Year Programs*. 1111 Kenyon Road, Urbana, Ill. 61801: National Council of Teachers of English, 1983.

Journals

ABCA Bulletin and *Journal of Business Communication,* published by the American Business Communication Association, University of Illinois, 608 South Wright Street, Urbana, Ill. 61801. Dues $30.

Journal of Technical Writing and Communication, published by Baywood Publishing Company, Inc. 120 Marine Street, Box D, Farmingdale, N.Y. 11735. Subscription $50 (institution), $24 (individual).

Teaching English in the Two-Year College, published by National Council of Teachers of English, 1111 Kenyon Road, Urbana, Ill. 61801. Subscription $15.

Technical Communication, published by the Society for Technical Communication, 815 Fifteenth Street, NW, Suite 506, Washington, D.C. 20005. Dues $40, nonmember subscriptions $23.

The Technical Writing Teacher, published by the Rhetoric Department at the University of Minnesota for the Associated Teachers of Technical Writing. Send membership dues to Nell Ann Pickett, English Department, Hinds Junior College, Raymond, Miss. 39154. Dues $12.

Summer Institutes

Institute in Technical Communication (Southeastern Conference on English in the Two-Year College). Nell Ann Pickett, English Department, Hinds Junior College, Raymond, Miss. 39154. (1984)

Teaching Technical and Professional Communication. Conference Coordinator, Department of Humanities, College of Engineering, University of Michigan, Ann Arbor, Mich. 48109.

Teaching Technical and Professional Communication. Offices of Continuing Studies and Special Programs, P.O. Box 1892, Rice University, Houston, Tex. 77001.

Teaching Technical and Professional Writing. Director, Scientific and Technical Communication, 14 Loew Hall, FH-10, University of Washington, Seattle, Wash. 98195.

Teaching Technical and Professional Writing Workshop. School of Continuing Education, Old Dominion University, Norfolk, VA. 23508.

Technical Writing Institute for Teachers. Technical Writing Institute, Division of Continuing Education, Rensselaer Polytechnic Institute, Troy, N.Y. 12181.

University of Minnesota Institute in Technical Communication: Advanced Seminar for Teachers. Department of Rhetoric, 1364 Eckles Avenue, University of Minnesota, St. Paul, Minn. 55108.

2 Practice

You now have a theoretical background on which to base classroom discussions of technical writing. Attention to style combined with a sense of audience, a clear purpose for writing, and an organized approach should produce clear, readable technical prose.

As Epictetus (circa A.D. 100) said, ". . . if you wish to be a good writer, write." The following exercises are designed to sharpen students' writing skills. The exercises for teaching writing are divided into three sections: Style, Prewriting, and Writing. The Style section presents some basic composition skills necessary to good technical writing: appropriate diction and voice, economy, paragraphing, parallelism, and emphasis. The skills learned in the Style section are necessary for successfully accomplishing the tasks in the other two sections. In the Prewriting section, students learn to analyze audiences, determine the purpose of writing each assignment, and organize material for a logical and coherent sequence. In the Writing section, students try their hand at writing, first in short reports and then in formal reports. The book concludes, as it should, with a brief discussion of revision.

Each section should be covered to develop better writing skills. For example, mastery of diction and economy may be wasted if the writer loses control of the organization or emphasis of the writing. If a writer doesn't keep the intended audience in mind, the writing may be too simple, insulting the reader, or too complex, confusing or losing the reader. And, if the audience is lost, it hardly matters that the purpose was achieved and the facts were clearly organized and presented, leading to a logical and useful recommendation.

Finally, students often learn remarkably well from each other. After the students have completed each assignment, encourage them to compare their writing with one another, as a way of pointing out techniques of good writing. Remind the students to look for clarity, conciseness, and successful accomplishment of purpose.

Style

We've all known people who have no sense of style. They may wear nice clothes, but something just doesn't look right. We've all listened to

comedians who simply were not funny, or watched horror films that bored rather than scared us, or heard singers whose songs were inappropriate for them. And, we've all known people who invariably say the wrong things. These people simply lack style.

Style in writing is just as important—and often as tricky—as wearing the right clothes, saying the right things, and otherwise favorably presenting oneself to others. Techniques of style are probably the most important skills a writer possesses—and often the most difficult to acquire and refine.

The following exercises give students an opportunity to develop some of the elements of good writing style: diction, economy, appropriate voice, paragraphing, parallelism, and emphasis.

Appropriate Diction

Appropriate diction means using common words that will not inflate writing to some abstract level of pomposity. For example, there is no need to *explicate* when you may *explain,* to *illustrate* when you may *draw,* or to *dispatch* when you may *send.*

I. To show students how frustrating it is to cope with technical words they do not understand, duplicate the exercise below (from *The Editorial Eye,* August 1982):

What Time of Day, What Time of Year?

Match each word with the season, time of day, or date(s) to which it refers. Answers will be given at the conclusion of the exercise.

1.	vernal	_____	a.	summer
2.	aestival	_____	b.	winter
3.	hiemal	_____	c.	autumn
4.	hibernal	_____	d.	spring
5.	meridian	_____	e.	morning
6.	matutinal	_____	f.	twilight
7.	crepuscular	_____	g.	noon
8.	vespertine	_____	h.	evening
9.	auroral	_____	i.	afternoon
10.	equinox	_____	j.	about June 22
11.	solstice	_____	k.	about September 23
		_____	l.	about December 22
		_____	m.	about March 21

The answers are:

1. d 2. a 3. b 4. b 5. g 6. e 7. f 8. h 9. e 10. k, m 11. j, l

II. Have students rewrite sentences, replacing the pompous words or phrases with words more commonly used. Sample sentences follow, but others abound in local newspapers, magazines, books, and school memorandums, and in the speech of newscasters, politicians, and colleagues.

1. The group plans to finalize the recommendations and procedures this afternoon.
2. I've asked my secretary to prioritize my appointments so I can spend more time at home this week.
3. If the members of the committee will verbalize their misgivings about the project, we can begin to conceptualize remedies.
4. Be sure to remunerate the foreman for fixing the belt on line 2.
5. Explicate the transition to the new secretary, please.
6. The findings of the researchers are legitimate under these conditions.
7. I would respond affirmatively to Rachel's nomination for president.
8. Be tenacious with your money.
9. In its totality, our company has increased its profits by 10 percent over last year.
10. If John and Mary would synthesize their findings, we could probably ascertain a simple recourse for our dilemma.
11. Joanne's stultification of Betsy in front of the president was certainly tactless.
12. He is quite diligent in his studies.
13. Please modify your recommendations to incorporate Tom's insightful suggestion.
14. Vicki attributed credit for her idea to a book she once perused.
15. The manager has dominion over the other employees in this department.
16. Next year, we plan to diversify our product line.
17. The plans for the new library should crystallize before the end of summer schooi.
18. The lawyer asked the defendant to characterize the persona of the plaintiff.

19. Plans call for a centralized computing center to be available for the entire staff's utilization.
20. The designer received a fee for her idea.
21. Dr. Thomas altered her original assignment to allay the students' anxiety.
22. The smell of burnt biscuits permeated the kitchen.
23. Rita was chagrined over not being invited to the prom.
24. The man was incarcerated for mugging old Mrs. Stansmith.
25. His circumlocution quickly bored everyone in the room.
26. The conflagration damaged the house beyond restoration.
27. It was quite fortuitous that I ran into my old friend from college.
28. Beth has succumbed to the influence and power of her position.
29. Did you notice how reticent Don was tonight?
30. Will you please deliver this term paper to Dr. Parramore prior to tomorrow morning's 10:00 class?

III. Have students keep a style journal. Each week, students read an article in a magazine or professional journal. For each article used, students enter the following items in their style journals:

1. The bibliographical information.
2. The main point of the article.
3. Four new or interesting words from the article.
4. The best stylistic sentence.
5. The worst stylistic sentence.

On designated days—say Fridays—select several students and ask them to write items 3, 4, and 5 on the board. You can then lead an impromptu discussion of diction, word effectiveness, etymology, connotation and denotation, word abuse, and so forth; why a sentence is particularly good or bad; and how to revise bad sentences. [Source: Philip Sbaratta. "Reading Meets Writing in Freshman English." *TETYC* 8 (1982), pp. 131–33.]

IV. The following exercise grew out of a classroom incident: A student who was having trouble writing a comparison and contrast essay was told to use one of the essays in the rhetorical reader as a model.

The student looked up the word *model* and found it meant "an example that may be used for imitation." The student looked up the word *imitate* and found it meant "to copy." So, for her next assignment, she copied word-for-word the essay in the reader.

To help students discover levels of diction and also nuances of words, duplicate sentences like the following and ask students to list all of the synonyms of the underlined words. (Have them use a thesaurus.) Students then look up the meanings of each synonym in a dictionary to determine which synonyms are appropriate for a given content and audience, and which are not.

Building on later assignments, also ask students to list antonyms, to look up their meanings, and to rewrite the sentences using various antonyms. The variety of appropriate and inappropriate word choice is almost infinite and helps students tune in to the impact of words on the intended message. Here's how it works:

"It was not an auspicious start for the coming year: on New Year's Eve, six people . . . were killed in a spree of violence near Bulawaya, Zimbabwe's second largest city."

auspicious—of good omen, propitious

Synonyms: *favorable*—boding well or promising
promising—giving promise of good results or development
propitious—boding well for the future
fortunate—lucky or favored with fortune

Fortunate is the least appropriate choice. *Propitious* and *auspicious* are appropriate as are *favorable* and *promising*. The levels of the two sets of words are obvious.

Antonyms: *unfortunate*—not fortunate, unhappy, unsuccessful, etc.; causing or attended by ill fortune; disastrous
untimely—occurring at the wrong time

"It was an *unfortunate* start . . ." is understated.
"It was an *untimely* start . . ." is clearly inappropriate.

"Banking institutions have long vied with one another to attract investors."

vie—to strive for superiority, contend, compete

Synonyms: *rival*—to strive to equal or excell, to compete
emulate—to try to equal or surpass
contend—to strive in competition, to struggle or fight;

to make an earnest effort, to contend
strive—fight, to vie or emulate
compete—to contend with others as for a prize, to engage in a contest or competition, to vie

Vied and *competed* are the best choices. *Rival* and *emulate* could mean equal as well as to surpass; "to equal" does not fit the sense of the sentence. *Contend* connotes fighting. The first meaning of *strive* makes this choice inappropriate.

Antonyms: Would not be appropriate

A random selecton of words from two pages in a thesaurus shows the infinite possibilities of this assignment in teaching appropriate diction:

bookworm—scholar, pendant; bibliophile
bourgeois—middle-class; conservative
boycott—shun, blackball, ostracize
brain—cerebrum, cerebellum; mentality, intelligence, mind; gray matter; intellect
bravado—bluster, braggadocio, boasting

Economy

Students should learn the importance of economy in their writing. Redundancy has no place in any type of writing, but especially not in technical writing when the readers are reading for information. In addition, excess verbiage often gets in the way of the meaning or sense of the sentence. Learning to be direct and exact are two of the most important basic skills needed for technical writing.

I. In the following sentences, unnecessary words fog messages that can easily be made clear when the sentences are rewritten. Students should look for the simplest means of communicating the message of each sentence.

1. It will be of great benefit for the engineers to keep their certifications currently up-to-date.
2. Tomorrow there may be some precipitation in the form of rain.
3. The reason why the machine broke down is due to causes unknown.
4. All officers should be aware of a planning session to be held at the morning hour of 10:00 a.m.
5. The report clearly shows that the cost of producing electrical parts has risen to twice last year's costs.

6. The commitment of this company to quality coupled with its commitment to lower prices is an explanation of the company's continued high rate of growth.
7. Corporate management requests that all vacation time be taken within the 12-month period of one year.
8. Please accept my apologies for the misunderstanding.
9. Our situation is such that we cannot ship the merchandise you ordered at the present time.
10. Due to the fact that our president is out of town, she will be unavailable to speak at this point in time.
11. Rotate the red knob to the "off" position.
12. Please present a summarized report to account for these travel expenses.
13. John was very congratulatory towards Howard on his promotion.
14. Apologies are in order for my behavior last night.
15. In response to your question, I would have to say that I couldn't consider another positon at this time.
16. We are all cognizant of the fact that Mrs. Parker will be virtually irreplaceable.
17. Breakfast will be served at 7:00 in the morning.
18. I am certainly honored that you thought enough of me to ask me to be your traveling companion for your trip to the Bahamas.
19. Nathan has offered to render his services as our lawyer in this venture.
20. In this day and time, one can never be too careful on the streets at night.
21. His possessive jealousy over his wife was making everyone feel uncomfortable.
22. He admitted he was guilty of stealing the silver tray.
23. The unexpected surprise of having a party in his honor completely overwhelmed Mr. Myers.
24. Sally left the party when she heard of the major crisis at the office.
25. The thunderstorm activity scared us all.
26. Jason threw the javelin a distance of 200 yards.

27. Even though they are twins, Jack and Peter are certainly exact opposites.
28. Please refer back to the earlier pages concerning freedom of speech.
29. Nancy introduced for the first time a new way of collecting accounts receivable that had not been paid.
30. Terri and Bish announced the birth of their baby boy.

II. Writing abstracts, also called summaries or synopses, is an excellent way for students to practice economy while learning more about the world.

A. Have students select a career field they are interested in pursuing. Ask them to submit a list of five periodicals devoted to that topic. Have them read one article a week from one of the magazines and write an abstract of that article. Call on four or five students at random each week to give oral reports on their articles.

Students reporting on articles are usually excited about what they read and their enthusiasm is contagious. Because students listening to the reports are full of questions, you will need to limit the report and question-and-answer session.

B. Ask students to read a high-interest article of 2000–3000 words and have them write a 75–100-word abstract of it. Collect the abstracts, select five or six of varying quality, and transfer them to overhead film or duplicate them on a ditto master. Lead a discussion of what is good and poor in each (students' names removed, of course). Some abstracts will be too concise, some too wordy or detailed, and some too vague. Some will miss the point entirely. If the last three abstracts discussed have good features—and they should if you've selected correctly—ask the class as a group to take the best features of each and combine them into a "perfect" abstract.

C. Have each student select a topic of interest; locate ten to twelve current articles on that topic; and abstract each article on a separate note card, headed by the appropriate bibliographical information. Have students arrange the cards alphabetically and prepare an annotated bibliography. The bibliography should have a title and an introductory paragraph or two, followed by the entries.

This assignment is excellent for leading up to the Literature Review (see page 51).

Appropriate Voice

Before writing, students should consider their topic and decide whether it requires active or passive voice. Some topics should be handled delicately—rejecting a proposal, cancelling a contract, denying a request, for instance. Others—such as placing an order, hiring someone, congratulating a colleague—can be handled more straightforwardly. This does not mean that passive voice is used solely for bad news and active voice for good news. Passive voice may be used when the doer is unknown or irrelevant to the subject matter.

I. In the first ten sentences, students should decide whether the sentence is in active or passive voice, then rewrite the sentence into the opposite voice.

1. It should be decided before tomorrow whether or not you will be promoted.
2. The board voted against the recommendation.
3. Dr. Petri's program was funded through the U.S. Biological Society.
4. The laboratory has found nothing unusual in the compound.
5. Mr. Bassett edits all our in-house reports.
6. Delivery will not be accepted after 5:00 Tuesday.
7. After voting against the amendment, the committee still had to decide what to do about underpaid employees.
8. Ms. Grimsley has been named one of the top buyers for our company.
9. Janet should be rewarded for her patience with slower students.
10. Bill responded admirably to the announcement of Steve's promotion.

II. Have students copy a paragraph from their favorite magazine. Is it written in active or passive voice? Have students rewrite the paragraph into the opposite voice and compare the relative effectiveness of each.

III. Using a magazine or newspaper, have students find two ads that are written in active voice and two written in passive voice. Ask why they think the ads were written in passive voice; in active voice.

Examples:

Passive Voice: "Our people have been trained to help you take advantage of these savings in ways that will work best in your

particular situation." This sentence is written in passive voice because it is not important who trained "our people." What is important is how "our people" can serve you, the customer.

Active Voice: "Only Emery A.M. delivers your small, your big, and your in-between to most of America the very next morning." This ad is written in active voice to emphasize the doer [Emery], what it does [delivers], plus its additional information—delivers what? to whom? when?

IV. In the following exercise, students must decide whether active or passive voice is needed. Then, ask the students to write a paragraph fulfilling the assignment.

1. Although John has been a good employee, your company is having to cut back in his department. You must tell John he is being laid off.
2. Suzie has been your friend since you began first grade together. Lately, however, you've noticed a lot of her friends have been avoiding Suzie because she is so critical of others. As her best friend, you must tell Suzie why she is losing so many friends.
3. Mr. Struthers has been an exceptional teacher for the past thirty years. Tonight he is being honored at a retirement banquet. As president of the senior class, you've been asked to give a brief speech.

Paragraphing

Just as a sentence has one thought, a paragraph has only one topic. The standard formula for writing a good paragraph is as follows:

Topic Sentence + Supporting Sentence(s) + Examples

Often, however, a writer puts more than one topic in a paragraph; or the information may be too dense to be handled in a single paragraph. Subparagraphing, the process of splitting out information from a single paragraph into several paragraphs, becomes a useful concept for the technical writer who faces this situation.

I. Ask students to rewrite the following paragraphs. They may split out the information by layout (enumeration of points or steps) or by grouping the information into smaller paragraphs.

1. The Republican platform of 1856 complained that the national Democratic administration had sanctioned violation of the

constitutional rights of the people of the Kansas Territory including the right to keep and bear arms; the right of an accused to a speedy trial by an impartial jury; the right of the people to be secure in their persons, houses, papers, and effects from unreasonable searches and seizures; the right not to be deprived of life, liberty, or property without due process of law; and the right to freedom of speech and of the press. The closing paragraph of the 1856 Republican platform asserted that "the spirit of our institutions as well as the Constitution" guaranteed "liberty of conscience and equality of rights among citizens" and opposed "all legislation impairing their security." [*Source:* Michael Kent Curtis. "The Bill of Rights as a Limitation on State Authority: A Reply to Professor Berger." *Wake Forest Law Review,* 14 (Feb. 1980), 53.]

2. Today the smooth oblong nuts [pecans] are a big business for growers—although even now cultivated varieties have not completely crowded out the wild pecans that are still highly regarded in many family orchards in the South. Production on a commercial scale is centered in Alabama, Louisiana, Oklahoma, and especially Georgia and Texas. Hundreds of varieties have been developed; constant improvement in cultivation and harvesting has resulted in nuts that are superior in size, flavor and color, and kernel content in relation to shell. Along with these developments, gathering pecans has changed from a manual to a largely mechanized operation using mechanical shakers and harvesters, a reflection of the huge continuing demand for pecans both to be eaten alone and to be put to any number of cooking uses. [*Sources:* Kay Shaw Nelson. "Pecans." *Cuisine,* 11 (Nov. 1982), 60.]

3. Today, Reid's clientele is decidedly international, but is still offered every amenity, thanks to the gracious expertise of Georges C. A. Hangartner, the hotel's Swiss general manager. To get down to specifics: There are 15 suites and 168 rooms, most with their own sea-view balconies, all with immense marble baths and whole walls of closet space (rates begin between $82 and $94 a day, depending on the season; for reservations, call 800-223-6800; in New York, Alaska, Hawaii, and Canada call 212-838-3110 collect). Then there are two restaurants, plus a superb rooftop Grill Room with magical views over Funchal; three cocktail bars, two tennis courts; two immense saltwater pools shelved on a promontory high above the sea; sea-level bathing terraces, and a jetty where boats are

moored. And, of course, there are all those acres of orchids and araucarias. [*Source:* Jean Anderson. "Madeira: Portugal's Lush and Lovely Isle." *Travel & Leisure,* 12 (July 1982), 67.]

4. The Rosenberg house is, in many ways, a classic solar design. It is long and narrow with all its rooms along an east-west axis to take full advantage of solar heating in the winter, and to avoid the summer sun. . . . Running the length of the house is an interior, concrete-block wall that stores solar heat and stabilizes interior temperatures. The roof is a single shed with exposed rafters, purlins and decking. The 6½-ft. ceiling on the north side rises to 9 ft. on the south. The south wall, except for the garage, is floor-to-ceiling glass. . . . This wall, which is more than 100 ft. long, lets in a lot of sunlight, and gives the feeling that the trees and sky are an integral part of the house. [*Source:* Helen J. Kessler. "In the Solar Vanguard." *Fine Homebuilding,* 11 (Oct.-Nov. 1982), 30.]

II. Ask students to look for poor paragraph structures in their favorite magazines. Have them bring in two paragraphs in the original form and rewritten.

Parallelism

As human beings we generally like things to be ordered. Even people whose homes or rooms are messy would probably prefer less chaotic arrangements. So it is with writing; we prefer constructions that are harmonious, equal, and ordered.

In geometry, lines are parallel if we can pick one line up, place it on top of the other line, and see that they match exactly. Likewise, in writing a series, we should be able to pick up one construction, place it over the others, and see that they match. Of course, the words will not be the same, but the constructions will be. So, a noun clause will fit on top of another noun clause, a phrase over another phrase, an adjective over another adjective, an infinitive over another infinitive, and so on. When this matching process fits, writers have created a parallel construction.

Example: The Smiths planned to fix the old house by reroofing the back of the house, by painting the shutters, and by rewiring the electricity.

The *by* phrases followed by the gerunds make the sentence completely parallel.

I. In the following exercise, have your students rewrite the sentence so that all the elements are parallel.

1. If you want to be a better student, you must learn to study hard, ask questions when you don't understand, and by keeping up with daily assignments.
2. Ralph really likes to jog, to ride in the car, and being with his girlfriend.
3. If you want to have friends, you can offer your time, your friendship, and be loyal.
4. Wherever you go, people will want to know your name, your age, and whether or not you're married.
5. Holding a good job requires three things: attention to detail, promptness, and that you are always considerate of your coworkers.
6. I especially enjoy reading works by John Irving, William Styron, and Graham Greene's novels.
7. The SAT will test your math skills and how well you can read.
8. From here, the flight goes to New York, Denver, and lands in Los Angeles.
9. Because she worked hard for her grades, and being a very proud girl, Veronica was upset when she was not named valedictorian.
10. Jenny was certain to be a good writer and would make lots of money.
11. *Newsweek* often presents articles on world news, national news, and news that occurs in Washington, D.C.
12. To hurt someone's feelings and never apologizing is a good way to lose friends.
13. Chickadees are birds that are small, brown, and have squeaky little chirps.
14. While you were out, the telephone rang six times, the doorbell rang twice, and the dog was scratching at the back door the entire time.
15. Buying rose-smelling air freshener is not the same as if you buy a rose.
16. To read something and understanding it are two different things.
17. My favorite television shows are M*A*S*H, Hill Street Blues, and I like 60 Minutes, too.

18. With your common sense and since you know a lot about people, I would suggest you enroll in some psychology courses.
19. Within the continental United States, there are often hurricanes, tornados, and earthquakes sometimes tremble the earth.
20. In the backyard, the squirrels were washing their faces, scampering up trees, and they chased each other.
21. Your shoes are either in the closet, under the bed, or you may have left them in the den.
22. According to my schedule, I have math at 9:00, English at 10:00, and I go to gym class at 11:00.
23. Our profits show a 2% increase over 1980, a 12% increase over 1979, and we made 16% more money than we did in 1978.
24. The car came by the house twice, honked its horn, but started to leave when my father went to the door.
25. Barbara spent most of her vacation catching up on sleep, writing letters to friends, and she watched television.

Emphasis

It is generally pretty simple for a writer to decide what should be emphasized in a sentence, paragraph, or report. Often the difficult part is finding a way to emphasize that important point. As discussed in the theory section of this book, emphasis comes at the beginning of a sentence or in the main clause of a sentence, but it is never buried in the sentence. Topic sentences of paragraphs are traditionally the first sentences of the paragraphs, though some writers place topic sentences at the end of a paragraph of inductive reasoning.

I. In the following exercises, ideas are listed as complete sentences. Have your students decide which sentence deserves the most emphasis. Then, students should write one sentence with the most important thought in the most strategic position in the sentence. Because students' opinions of which sentence is most important will vary, their sentences will not be alike. Discuss with the students how the sentence variations affect meaning.

    1. IBM makes computers.
    2. IBM employs thousands of people.
    3. IBM is headquartered in New York.

1. Many people are unable to afford the high price of gasoline.
2. More people are carpooling than ever.
3. More people are taking the bus than ever.

1. Jan really enjoys classical music.
2. She buys tickets to the symphony every season.
3. She pays $50 for the best seat in the house.

1. It snowed 10 inches last night.
2. School has been cancelled today.
3. All the neighborhood kids are sledding down the hill behind our house.

1. John really knows how to study.
2. He has been studying for this history test for a week.
3. Tonight, he merely has to review his notes.

1. Mr. Peterson is my favorite teacher.
2. He teaches English.
3. That doesn't mean that English is my favorite subject.

1. I have to take math, science, and English to complete my requirements.
2. I can't decide if I want to take a business course or a foreign language as an elective.

1. Kay and Doug are two of my favorite people.
2. They are always willing to listen to my problems.

1. Bilbo is a huge cat.
2. Bilbo belongs to a good friend of mine.

1. One of my favorite pastimes is reading.
2. I especially like books by early 20th century authors.
3. I do not like science fiction.

II. Have your students write a brief paragraph for each of the following exercises. Remind them that they should use appropriate diction and economical language and write in the appropriate voice.

A. Explain your poor grades to your parents. Emphasize your strong areas, extracurricular activities, and so on. Deemphasize your social life.

B. Emphasize your desire to attend the college of your choice, not the one of your parents' choice. Be careful not to offend your parents.

C. Emphasize your strong points. Deemphasize your weaknesses.

D. Emphasize your need for a new car, new clothes, or other new items.

E. Emphasize your progress on a particular project. Deemphasize that the project is behind schedule.

F. Refuse someone a job. Emphasize their qualifications and deemphasize your company's financial inability to employ that person.

Prewriting

Just as people prepare for going to work, for giving a party, and for cooking a meal, writers prepare for writing. Prewriting involves more than finding some paper and a pen; it involves analyzing the audience, determining the purpose of writing, and organizing ideas and information.

Audience analysis is the process of learning as much as possible about the intended readers. Audience analysis is knowing, for example, that one doesn't need to explain a cam shaft to a group of mechanics, the disadvantages of aging to a group of senior citizens, or the power of the press to a politician.

Before beginning to write, a writer must have a clear idea of why she or he is writing. Should the audience be persuaded or merely informed? Because some persuasive writing uses facts to persuade, often the purpose of the writing may seem to be both informative and persuasive. Actually, however, one judges purpose by what the readers do with the information. If they learn some new information, as from instructions, the writing is informative. But if they form or change an opinion, or if they are motivated to act, the writing is persuasive. For example, when the Federal Drug Administration informs the public of a new drug, its purpose is informative; but when the pharmaceutical firm advertises its new drug, its purpose is persuasive.

The last step of prewriting is to organize ideas and information. Outlines help writers group topics for logical presentation. Although students usually balk at outlines, writing without an outline usually has the same result as trying to build a house without a blueprint: a lot of frustration, wasted time, and chaos.

The purpose of the following exercises is to show students the importance of prewriting, and also to teach the methods of prewriting. Once mastered, prewriting invariably produces better writing.

Audience Analysis

Students are accustomed to writing for one specific audience: the teacher. They are fully aware that you grade them, and most of them try to figure out what you like and dislike. Then they try to adjust their writing to impress you.

In technical writing, writers rarely know as much about their audience as students know about their teachers. Yet, a few considerations regarding the intended reader may well determine the success or failure of a written communication. A good writer should learn as much as possible about the following:

> the reading level of the audience. Are the readers children? adults? teenagers?
>
> the audience's knowledge of the subject-matter. Are the readers totally unfamiliar with this subject, or are they experts, or do they just have some general knowledge?

After answering these questions, the writer should have a basic knowledge of the audience's needs. Keeping those needs in mind, the writer is one step closer to beginning to write.

The following exercises are designed to help students understand that writing differs according to the intended audience. Remind students to use their techniques for good style to fulfill the objective of these assignments.

I. The following two paragraphs are taken from encyclopedias. The first is from a children's encyclopedia and the second excerpt is from an adult-level source. Have your students read both paragraphs. Then ask them to write their own paragraphs, pointing out the differences in the two accounts. Specifically, students should look at vocabulary, tone, sentence length, and sentence complexity.

> Worm (wĕrm) In general, worms seem to be useful only when they are wanted as bait for fish. Actually they are much more important. Among them are found some of man's best friends as well as his most serious enemies. The friends are the earthworms, which by burrowing into the soil, loosen it for the effective growing of crops. (See Earthworm.) The enemies are the parasitic worms,

which bring disease to their hosts, both men and animals, and sometimes even cause death. (See Parasite and Saprophyte.) [*Worm, Britannica Junior Encyclopedia: For Boys and Girls,* 1968 ed.]

Worm, popularly almost any kind of elongated, apparently limbless creature, from a lizard, such as the blindworm, to the grub of an insect or an earthworm. The Latin term for worms, vermes, was employed as a taxonomic unit to include practically invertebrates by Linnaeus in his system of classification of animals. The term, in a somewhat restricted sense, continued to be applied off and on during much of the 19th century to a heterogeneous assemblage of wormlike invertebrates. The concept of a phylum Vermes has been abandoned by zoologists as an impossibility because the animals termed worms belong to many different groups and have widely varied origins, body plans, and life histories. [*Worm, Encyclopedia Britannica,* 1968 ed.]

Next, ask students to choose their own topics of interest and make a similar comparison.

II. Prepare a list of topics of general scientific interest (e.g., whales, black holes, Jupiter, volcanoes, computers). Ask each student to select a topic and find two articles on that subject in two different magazines with different readerships (for example, *Ranger Rick* and *Scientific American*). After students have read their two articles, ask them to do an analysis of word choice, use of definition, sentence and paragraph length, use and kind of graphics, and layout.

III. Ask students to compare a news story featured in *The Weekly Reader, Senior Scholastic,* or other student newspaper and a news story featured in an adult-level newspaper, such as the *Washington Post.*

IV. Ask students to bring to class their favorite magazine or journal. It may be a popular, technical, or academic magazine. With luck, you'll get a variety of types—from *Seventeen* and *Ingenue* to *Popular Mechanics* and *Hi Fi* to *Harpers* and *National Geographic.*

1. Have students exchange magazines so that they do not have their own. Then ask students to classify the advertisements according to product, and to count the number of ads per product (e.g., 15 cosmetic ads, 3 movie ads, 5 health ads, 7 book ads, 4 soft-drink ads).

2. Next, have the students analyze to what human need the ads appeal, based on the pictures and words used (e.g., cosmetic ads—attractiveness and youth; movie ads—entertainment; book ads—intellect).

3. Have students write a profile of the average reader of the magazine, based on the kinds of products advertised and on the advertisements' appeal to human needs.

4. Then, ask the students to go to the table of contents in the magazine. Judging solely from the articles, is their initial characterization of the average reader correct? Have students point out similarities and differences. Obviously, the readers of *Parents Magazine* and *Today's Health* will differ markedly from the readers of, say, *Cosmopolitan* and *Playboy*.

V. Writing directions not only teaches students about audience analysis, but also provides practice in one of the modes of technical writing.

   A. Ask students to give directions to their homes from school, first to someone who has never been in their area before.

   B. Ask students to give a complete stranger to their school directions to an out-of-the-way, hard-to-find room on campus.

   C. Ask each student to write his or her name on a slip of paper, to leave the classroom and hide the slip of paper somewhere on campus, and to return to the classroom within ten minutes. when they return, ask them to write a set of instructions directing another student to the slip of paper. Students sign their directions, exchange them, and, *following the directions only,* try to find the hidden slip of paper.

   D. Tell students that before the next class, they should go to the school library and select one book on the shelves, recording its title, edition, author(s), copy number (if applicable), and call number. Have students bring to class a set of directions telling another student where to find the book, assuming that student is standing at the front door of the library. The instructions may not include the subject matter, title, edition, author(s), copy number, or call number of the book, although they may include a physical description of the book (e.g., "The book is 5½″ × 8¼″ × 1½″, hardback in black cloth, with a nine-word title in gold letters on the spine). Instructions should be signed.

At the next class, take up the instructions and distribute them at random, making sure no student gets his or her own. Students should then proceed to the library and, *using the instructions only*, locate the book. (No talking, pointing, etc., allowed!) When students locate their books, they record the title, edition, etc., and return to the classroom.

Determining Purpose

After a writer has determined who the audience will be, the next step is to determine the purpose for writing. Should the message be informative or persuasive?

I. Have your students determine whether the following should be informative or persuasive.

1. A congressman returns home and explains his position against the building of the MX missile.
2. The Junior-Senior committee has studied three sites for a spring trip or three bands for a spring dance.
3. A teacher explains the procedures for responding to a fire drill.
4. The librarian explains the procedure for checking out books.
5. A student explains why his or her work was handed in late.
6. A famous cook gives her recipe for lemon meringue pie.
7. The IRS writes a pamphlet entitled "How to Cut Your Taxes."
8. H&R Block writes a pamphlet entitled "How to Cut Your Taxes."
9. *National Geographic* presents an article called "The Whales of the Pacific: A Vanishing Breed."
10. In an editorial in *Mother Jones*, the author writes an article, "We Must Save the Whales."
11. The IRA division of City Bank publishes a pamphlet "Don't Gamble with Your Retirement."
12. Sylvia Porter writes an article "How IRAs Work."

II. Have students select a topic from the list below, or one of their own choosing which you have approved. Ask them first to write an informative paper on the subject. Then, ask them to write a persuasive, or dissuasive, paper on the same topic.

The Air We Breathe	Stereotyping
Capital Punishment	Platform Shoes

Smoking	Boxing
Censorship	Hunting
Cats	Television Programming
Rock Music	Slang Words

The first paper on smoking for example, might discuss the history of smoking, the different forms of smoking (e.g., pipes, cigarettes, cigars), or even the effects of smoking on the human body, concluding that smoking is hazardous to one's health. This paper, however, is not to attempt to persuade the reader to stop smoking; that is the job of the second paper.

Organization

After deciding who the audience is and what is the specific purpose for writing, the student is ready to organize information for presentation. Organization is an essential step in prewriting. If the writer has not clearly organized information, the writing will not be organized either.

Many composition handbooks offer patterns for organization, and the process is the same for technical writing. Through organization, students soon see what information is or is not important, what information should receive the most emphasis, and what information should be grouped.

I. Have students group the following potpourri of goods into an orderly grocery list under six main headings (also found in the list below):

Fresh produce	Cheese
Grapes	Canned goods
French fries	TV dinners
Milk	Detergent
Applesauce	Popsicles
Frozen foods	Sardines
Paper towels	Sour cream
Cabbage	Hamburger
Meats	Lettuce
Household supplies	Ice cream
Soups	Furniture polish
Dairy goods	Roasts
Pork chops	Yogurt

II. Have students assume that they are writing an article for a popular magazine, advising readers how to borrow money from a commercial institution. Tell them to organize the following information into an outline and be able to justify their arrangement:

Types of loans	Commercial banks
Insurance policy loans	Shop around
Credit unions	Passbook loans
Unsecured personal loans	Savings and loan associations
Where to borrow	Get a simple-interest loan
Finance companies	Tips on borrowing
Secured personal loans	Pay on time

You can add examples of your own by finding so-called how-to articles and scrambling the outline of the article. Or, better yet, assign students the task of finding such an article, outlining it, and scrambling the outline for others to reorganize.

III. For the following topics, have students develop a specific audience, a specific purpose for writing, and a specific outline for meeting the audience's needs and fulfilling the purpose of the writing.

Example:

Topic: Housing in our town
Audience: College students
Purpose: To inform college students about housing facilities in our town
Outline:

I. Dormitories
   A. Availability
   B. Cost
   C. Location
   D. Advantages
   E. Disadvantages
II. Rooms in Private Homes
   A. Availability
   B. Cost
   C. Location
   D. Advantages
   E. Disadvantages

III. Apartments
- A. Availability
- B. Cost
- C. Location
- D. Advantages
- E. Disadvantages

Topics:

Types of stereo systems
Foods available in the school cafeteria
How to choose a college
Programming on cable network TV
Reasons for doing volunteer work
How to make extra money
The costs of going to the junior-senior prom (1) for girls and (2) for boys
The cost of owning an automobile
Job possibilities in the field of technical writing
How to choose a form of exercise

IV. Have the students designate which organizational patterns they would use in the situations described below. (Organizational patterns include chronological, spatial, comparison and contrast, problem-solution, cause and effect, classification.)

1. An article in your local newspaper describing the origin and financial growth of a community business.
2. A report on the physical layout of your school library.
3. An article in the school newspaper about the shortage of lockers for students and recommending a remedy.
4. A memorandum from your school counselor's office explaining the steps for applying to college.
5. A humorous essay on kinds of blind dates.
6. A presentation by the school librarian on the possible consequences of censoring library materials.
7. A presentation by the PTA president on the benefits vs. disadvantages of censorship of library materials.
8. A presentation by the principal of your school to the PTA telling how reduced taxes have decreased course offerings this year.

9. A report by the state board of education reviewing plans to consolidate the city and county schools.

Writing

Definition

Since a reader unfamiliar with a topic will probably be unfamiliar with the terms related to that topic, a good place to begin is with definitions. Definitions may be brief, defined parenthetically or in a glossary at the beginning of a report; or they may be extended, running a paragraph or more.

1. Have students write a formal definition (term, class, differentiae) for each of the words listed below (or draw up your own list). Students may need to refer to reference books.
   Example: Dramamine (term) is a drug (class) used for motion sickness (differentiae).

furnace	sausage
sapphire	criminology
utopia	entrepreneur
bullfrog	nicotine
asteroid	periwinkle
neutron	septuagenarian
crucifix	flora
scabbard	vermicelli

2. Have students select three or more of the words or terms above or below and write extended definitions of them. Extended definitions may be developed by using one or more of the following: etymology, history, negation, comparison and contrast, example, and description.

influenza	corfam
diplomat	eddy
cornucopia	serf
earthquake	cellophane
watershed	immunization
lemming	perfume
social security	university

life insurance	retirement
calendar	tobacco
newspaper	couturier

Instructions

Teaching someone how to do something—to set up a new department, operate a computer, develop a filing system—is a rather common function of technical writing. The writer tells the reader step-by-step how to accomplish the task.

Writers must be careful to: (1) arrange all steps chronologically—in the order in which they are to be performed, (2) include all steps—never assuming the doer will already know to do something, and (3) explain all steps thoroughly.

1. Have students write instructions for the following processes. Tell them to assume that the reader (doer) has never seen or done the procedure before.

Operate a pencil sharpener.	Change a tire.
Cook your favorite dish.	Shuffle cards.
Wash a car.	Pop corn.
Use a curling iron.	Apply makeup.
Operate a rod and reel.	Operate a lawnmower—push-type or riding.
Hook up a stereo system.	Plant flowers.
Operate a kerosene heater.	Wash clothes.
Balance a checkbook.	Wrap a gift.
Tie a shoe.	Clean a bathtub.
Unclog a sink.	Strike a match.
Thread a needle.	Make up a bed.
Sew on a button.	Operate an instamatic camera.
Make a long-distance telephone call.	

Next, have students exchange instructions. Ask them to look for (1) errors in chronology, (2) poor explanations, or (3) omitted steps. They'll probably enjoy each others' errors. Have them discuss the consequences of the errors.

2. Ask students to bring to class a set of instructions from a home appliance leaflet or a do-it-yourself book. Then have the students

analyze the instructions for clarity, order, audience analysis, graphics, tone, and language. If students find the instructions lacking in any of these areas, have them rewrite or redesign the instructions.

Classification

Every day we are confronted with masses of data that would overwhelm us if we did not organize them into some kind of classification system. Imagine shopping in a supermarket or drug or department store that did not arrange the goods according to classification. Linnaeus was the master classifier, who positioned every known animal and plant into a system that is still used and recognized the world over. Our students need not be Linnaeuses but they do need to know how to organize data in order to conquer chaos in their writing.

1. Have students classify as many kinds of each of the following categories as possible. Remind them that the classifications must not overlap.

cars	sports enthusiasts
trees	neighborhoods
dogs	houses
coats	television shows
athletes	jobs
shoes	schools
airplanes	jewelry
foods	music
friends	hair
parents	indoor sports

   A useful instructional technique is to assign the same topic and ask students to write their outlines on the board. You can then discuss various classification systems, point out overlappings within an outline, and rearrange outlines to accommodate a writer's purpose and audience.
2. Have students write a paper based on one of the outlines. Assigning one of the more technical topics would be a good choice at this point.

Description

Students are most likely to be well versed in the use of description. They describe the new outfit they've bought, a new girlfriend or boyfriend, a

teacher, a new car on the market. Description involves expressing details of an object so clearly that the listener—or for our purposes, the reader—can visualize it.

To write an effective description, the writer must detail in an organized fashion as much information as possible about size, color, shape, measurements, texture, chemical makeup, or other distinguishing features of an object.

1. Have students write a description of any object in the classroom without actually naming it. Then ask them to exchange papers and see how quickly they can find the object. Was there any confusion? Could something have been worded better and been more helpful?

2. Ask the students to write a description of a:

pencil	cup
pen	postage stamp
knife	dime
yardstick	balloon
candle	ball
rug	bird feeder
dictionary	sock

3. Ask students to describe a common object used at home. (*Warning:* the mechanism should not be a complex one at this stage.) Appropriate items include:

flashlight	face of a radio
pencil	front of a television set
can opener	scales
stove top	oven
scissors	blender
stapler	folding chair
tape dispenser	sprinkler
thermometer	standard pencil sharpener
bill	kerosene lantern

Process Description

Describing a process may seem to be the same as giving instructions. The difference, however, is that instructions are user-oriented—that is, written

for the doer to follow, step-by-step, to accomplish an objective. Process descriptions, on the other hand, are written to explain how something works. For example: how to operate a vacuum cleaner (instructions); how a vacuum cleaner works (process description).

The style of writing is also different. With instructions, the writing has a "you" approach. For example: To bake a cake, first you. . . . With process description, the third person is generally used. For example:

> In man, tooth decay is caused by bacteria in the mouth acting on carbohydrates, chiefly sugar. This action produces an acid which can dissolve tooth enamel and so start a cavity. Usually the acid begins to work where there is a scratch or crack in the enamel or where the enamel is hard to clean. As the enamel dissolves, a small hole is formed, and decay begins. [*Source:* "Tooth." *Britannica Junior Encyclopedia: For Boys and Girls.* 1968 ed., p. 31.]

Exercise: Have students write a process description for the following topics. This is a good time to get the students to use the library or other outside resources.

Explain how:

- a boomerang works
- a battery works
- a doctor examines ears
- a sponge works
- a bill is passed through congress
- the Electoral College works
- water is purified
- a solar eclipse happens
- an earthquake occurs
- a zipper works
- a manual typewriter works
- photosynthesis occurs
- sulphur is oxidized
- plants are cross-pollinated
- waterfalls generate electricity
- the liver works
- coins are made
- fingernails grow
- an automatic drip coffee maker works

Short Reports

One of the most common documents in technical writing is the report. Technical writers may have to define new terms, devise a classification system, write up a set of instructions, or explain a new procedure in a report. A boss may ask the technical writer to study a certain problem and write recommendations for solutions. Or the writer may be asked to work with marketing experts in developing the best marketing procedures for a new product.

The following case studies may be used as topics for short reports. In addition, ask your students to develop their own topics for short reports based on current events in their school, neighborhood, town, or state.

Continue to remind students that their style is important here for communicating their message. They should also apply the principles of audience analysis, determining purpose, and organization, as in all other assignments.

A. You are a member of your school's judicial board, a student organization that sets up procedures for punishing those who violate school policies. Lately there have been several instances of cheating. Your assignment is to report to the judicial board the extent of the problem and possible actions the board may adopt as policies for handling offenders. You should address several questions in your report:

   1. What is cheating?
   2. What are the limitations of the board's power?
   3. Will first-time offenders be punished? Will they be punished differently from repeat offenders?
   4. What are your recommendations?
   5. Do you need the support of teachers, school board, or principal to enforce your recommendations?
   6. Why should these recommendations deter cheaters?

B. A wealthy alumnus has donated $10,000 to your school. Your principal has asked students to recommend ways to use the money. Your teachers want new books and audiovisual equipment for the library. Students want a student lounge. In your report on behalf of the student body, persuade your principal of the need for a student lounge. Be prepared in your report to respond to your principal's concerns that:

   1. Students may cut classes to spend time in the lounge.
   2. Students may get involved in smoking, drugs, or alcohol in the lounge.
   3. Students may be too loud in the lounge, disrupting classes.
   4. A lounge won't help you as much in the long-run as new books and audiovisual equipment would.
   5. No one will clean the lounge.

Formal Reports

Literature Review

Two words need to be defined here: *literature* and *review*. Literature, in business and industry, does not mean belles lettres; rather, it refers

to the collective body of knowledge that has been written on a particular topic in the field. For example, medical journals publish the literature on x-ray diagnosis, x-ray therapy, x-ray safety. A *review* is a summary or synthesis of the most pertinent literature about a particular topic. Thus, a literature review on, say, the fast-food restaurant industry would summarize the past growth, current status, and projected growth of the industry. Likewise, a literature review on SAT scores would trace the trends in scores over a designated period; whereas a literature review on whether the SAT is a culturally biased test would summarize the literature presenting both sides.

Literature reviews are used widely in business, industry, and the professions for readers who want a quick, accurate overview of the current trends or status of their profession.

Writing literature reviews is a rigorous assignment for students: It requires that they limit their topic; determine their purpose and scope; search the literature; and evaluate, interpret, and synthesize it.

Have students select and narrow a topic from an earlier assignment such as the annotated bibliography assigned on page 30 or their readings from the exercise on page 30. Students will research the topic and from that research write a literature review. Appropriate kinds of topics include:

1. Trends in any field—fashion design, nursing, petroleum, art, music, stereophonics, automobiles, office management, construction.
2. Treatment of any disease or disorder—cancer, diabetes, alcoholism, depression.
3. Theories prevalent in any area—management, sales, mathematics, physics.
4. Uses of raw or synthetic materials—silver, rubber, sand, coal, polyester, plastic, fiberglass.

Field Study

One of the liveliest assignments, believe it or not, is the formal technical report, especially if the research involves field work rather than library research only. Figure 3 (pp. 53–54) shows the assignment as we give it to our classes.

A Final Note: Revision

Most people think the hardest part of writing is getting that first word on the page. Few things in this world are as intimidating as a blank sheet of paper that is waiting for the writer to spill ideas.

But even more dreadful than getting those first words onto paper is having to take those words out—a process as painful to most writers as a tooth extraction. All writers tend to believe that their words are precious.

Part of becoming a good writer, however, is learning to look at one's writing critically. And learning to be objective about it is one of the best ways to improve the writing: Is it really good? Can I say it better? Is this word or phrase necessary? Do I need to explain more?

Most technical writers agree that rewriting is at least half the process of producing effective manuscripts. In the section on style, students learned to revise poor sentences and paragraphs to make those constructions clearer, stronger, and more direct. As a teacher, encourage students to look at each sentence and paragraph they write, just as they did the sentences and paragraphs in the style section. After this critical reading, they should revise for appropriate diction, economy, appropriate voice, proper emphasis, parallelism, and good sentence and paragraph structure wherever necessary. With attention to style combined with a sense of audience, a clear purpose for writing, an organized approach—and perseverance—students can produce clear, readable technical prose.

Memorandum

To: Technical Writing Students
From: [Teacher's Name]
Subject: Formal Technical Report
Date: [Current]

For your formal technical report, choose a topic and submit it for my approval. Ideally, your topic should be an actual problem faced by an organization, group, or individual, because your report will be written specifically for that limited audience. Do not choose a topic that keeps you in the library; most of your information will be gathered from interviews, questionnaires, or your own observation or experimentation. You may not change your topic after the midway point for any reason.

Your formal written report will be an analytical one—the relevant facts and findings plus interpretation, evaluation, and recommendations. This kind of report usually runs 8 to 12 pages for the body alone and requires 6 weeks to complete.

You may undertake the project alone, in pairs, or in groups of 3 to 5 persons. I recommend the group.

Continued

Figure 3. Field Study Memorandum.

Report Prospectus

On [date], submit on one typed page:

your tentative title;

a one-sentence statement of the purpose of your report;

an indication of who the readers are;

sources and methods of collecting data; and

major divisions (with subdivisions, if you like) of the body or text of your report.

Progress Report

Be prepared within two days' notice to give me a progress report in memo form, indicating:

what you have accomplished,

what difficulties you have encountered,

what changes, if any, you have made from the prospectus,

what remains to be done, and

your plans for finishing.

Final Report

On [date], submit two copies of the report with an appropriate cover, title page, letter of transmittal, abstract, table of contents, body (including introduction, findings and interpretations, conclusions, and recommendations), bibliography (if applicable), and appendix, (if necessary).

As suggestions, here are some of the better topics chosen by former students:

A Comparison of the Price of Three Brand-Name Antihistamines at Five Town Pharmacies

A Price Comparison of Eight Town Supermarkets

Hot Stuff: A Comparison of Six Energy Systems for an 1800-Square-Foot House

Checking It Out: A Guide for Opening a Checking Account in Your Town

Open Wide: A Survey of Dental Rates in Your Town

[Adapted from C. W. Wilkinson, Peter B. Clarke, and Dorothy Colby Menning Wilkinson, *Communicating Through Letters and Reports,* 7th ed. Homewood, Ill.: Richard D. Irwin, 1980.]

Figure 3. Field Study Memorandum (continued).

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